

# EXHIBIT B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	Atty. Docket No.:
ROCHETTE ET AL.	)	78803 (120-2 US)
	)	
Serial No. 10/946,536	)	Art Unit: 4113
	)	
Filing Date: SEPTEMBER 21, 2004	)	Examiner:
	)	SYED A. RONI
Confirmation No. 7612	)	
	)	
For: COMPUTING SYSTEM HAVING USER	)	
MODE CRITICAL SYSTEM ELEMENTS	)	
AS SHARED LIBRARIES	)	
	)	

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AMENDMENT AFTER FINAL

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Responsive to the Final Official Action of April 2, 2009, please enter the amendments and consider the remarks set out below.

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Filed: **09/21/2004**

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**In the Claims:**

1. (Currently Amended) A computing system for executing a plurality of software applications comprising:

a) an operating system having an operating system kernel having OS critical system elements (OSCSEs) for running in kernel mode; and,

b) a shared library having critical system elements (SLCSEs) stored therein for use by the plurality of software applications in user mode and

i) wherein some of the SLCSEs stored in the shared library are functional replicas of OSCSEs and are accessible to some of the plurality of software applications and when one of the SLCSEs is accessed by one or more of the plurality of software applications it forms a part of the one or more of the plurality of software applications, and

ii) wherein an instance of a SLCSE provided to one or more of the plurality of software applications from the shared library is run in a context of said one or more of the plurality of software applications without being shared with other of the plurality of software applications and where one or more other of the plurality of software applications running under the operating system have use of a unique instance of a corresponding critical system element for performing essentially the same function.

2. (Original) A computing system as defined in claim 1, wherein in operation, multiple instances of an SLCSE stored

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in the shared library run simultaneously within the operating system.

3. (Original) A computing system according to claim 1 wherein OSCSEs corresponding to and capable of performing essentially the same function as SLCSEs remain in the operating system kernel.

4. (Previously Presented) A computing system according to claim 1 wherein the one or more SLCSEs provided to one of the plurality of software applications having exclusive use thereof, use system calls to access services in the operating system kernel.

5. (Original) A computing system according to claim 1 wherein the operating system kernel comprises a kernel module adapted to serve as an interface between a SLCSE in the context of an application program and a device driver.

6. (Previously Presented) A computing system as defined in claim 1, wherein an SLCSE related to a predetermined function is provided to a first of the plurality of software applications for running first instance of the SLCSE, and wherein an SLCSE for performing essentially a same function is provided to a second of the plurality of software applications for running a second instance of the SLCSE simultaneously.

7. (Original) A computing system according to claim 5 wherein the kernel module is adapted to provide a notification

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of an event to an SLCSE running in the context of an application program, wherein the event is an asynchronous event and requires information to be passed to the SLCSE from outside the application.

8. (Previously Presented) A computing system according to claim 7 wherein a handler is provided for notifying the SLCSE in the context of one of the plurality of software applications through the use of an up call mechanism.

9. (Original) A computing system according to claim 7 wherein the up call mechanism in operation, executes instructions from an SLCSE resident in user mode space, in kernel mode.

10. (Previously Presented) A computing system according to claim 2, wherein a function overlay is used to provide one of the plurality of software applications access to operating system services.

11. (Previously Presented) A computing system according to claim 2 wherein SLCSEs stored in the shared library are linked to particular software applications of the plurality of software applications as the particular software applications are loaded such that the particular software applications have a link that provides unique access to a unique instance of a CSE.

12. (Original) A computing system according to claim 2 wherein the SLCSEs utilize kernel services supplied by the

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operating system kernel for device access, interrupt delivery, and virtual memory mapping.

13. (Original) A computing system according to claim 1, wherein SLCSEs include services related to at least one of, network protocol processes, and the management of files.

14. (Previously Presented) A computing system according to claim 11 wherein some SLCSEs are modified for a particular one of the plurality of software applications.

15. (Original) A computing system according to claim 14 wherein the SLCSEs that are application specific, reside in user mode, while critical system elements, which are platform specific, reside in the operating system kernel.

16. (Original) A computing system according to claim 5 wherein the kernel module is adapted to enable data exchange between the SLCSEs in user mode and a device driver in kernel mode, and wherein the data exchange uses mapping of virtual memory such that data is transferred both from the SLCSEs in user mode to the device driver in kernel mode and from the device driver in kernel mode to the SLCSEs in user mode.

17. (Previously Presented) A computing system according to claim 1 wherein SLCSEs form a part of at least some of the plurality of software applications, by being linked thereto.

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18. (Original) A computing system according to claim 2 wherein the SLCSEs utilize kernel services supplied by the operating system kernel for device access, interrupt delivery, and virtual memory mapping and otherwise execute without interaction from the operating system kernel.

19. (Original) A computer system as defined in claim 2 wherein SLCSEs are not copies of OSLCEs.

20. (Original) An operating system comprising the computing system of claim 2.

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**REMARKS**

The Examiner is thanked for the thorough examination of the present application. The Examiner and his Supervisor are also thanked for the telephonic interview of June 3, 2009, during which the current claim rejections were discussed and wherein the Examiner agreed that claim amendments along the lines made herein to advance prosecution would define over the prior art. No new matter has been added. The patentability of the claims is discussed below.

**I. The Claimed Invention**

The present invention, as recited in amended independent Claim 1, for example, is directed to a computing system for executing a plurality of software applications. The computing system includes an operating system having an operating system kernel having OS critical system elements (OSCSEs) for running in kernel mode. The computing system also includes a shared library having critical system elements (SLCSEs) stored therein for use by the plurality of software applications in user mode. Some of the SLCSEs stored in the shared library are functional replicas of OSCSEs and are accessible to some of the plurality of software applications. When one of the SLCSEs is accessed by one or more of the plurality of software applications, it forms a part of the one or more of the plurality of software applications. An instance of an SLCSE provided to one or more of the plurality of software applications from the shared library is run in a context of the one or more of the plurality of software applications without being shared with other of the plurality of software



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applications. One or more other of the plurality of software applications running under the operating system have use of a unique instance of a corresponding critical system element for performing essentially the same function.

## **II. The Claims are Patentable**

The Examiner rejected independent Claim 1 over Cabrero et al. Cabrero et al. is directed to a computer system that uses a microkernel to execute two different tasks, for example, operating systems, and uses a common shared library. Rather than each task setting up its own libraries, a global offset table is set up for each task so that the tasks can use common shared libraries.

Independent Claim 1 has been amended to recite that some of the SLCSEs stored in the shared library are functional replicas of OSCSEs. The Examiner agreed that Cabrero et al. fails to disclose the SLCSEs stored in the shared library being functional replicas of OSCSEs. Instead, the Examiner indicated that Cabrero et al. discloses a common shared library 44 that includes addresses to the microkernel common services. (See Cabrero et al. Col. 8, lines 37-43). Nowhere does Cabrero et al. disclose the SLCSEs stored in the shared library being functional replicas of OSCSEs, or in other words, replacements. Accordingly, independent Claim 1 is patentable for at least this reason alone.

Additionally, Applicants submit that Cabrero et al. fails to disclose an instance of an SLCSE provided to one or more of the plurality of software applications from the shared library being run in a context of the one or more of the

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plurality of software applications without being shared with other of the plurality of software applications. The Examiner contended that Figure 1, and Col. 5, lines 37-43, of Cabrero et al., which is reproduced below for reference, disclose the above-noted deficiency.

Dominant personality applications 28 shown in FIG. 1, associated with the UNIX dominant personality example, are UNIX-type applications which would run on top of the UNIX operating system personality 32. The alternate personality applications 39 shown in FIG. 1, are OS/2 applications which run on top of the OS/2 alternate personality operating system 35.

As discussed during the telephonic interview, nowhere in the noted passages or anywhere else in Cabrero et al. does it disclose an instance of an SLCSE provided to one or more of the plurality of software applications from the shared library being run in a context of the one or more of the plurality of software applications without being shared with other of the plurality of software applications. Instead, Cabrero et al. merely discloses tasks 40 and 41, corresponding to the dominant and alternative personality operating systems 38, 39 accessing the common shared library 44 via an abstraction layer 45.

Indeed, as described in the Cabrero et al. Summary of the Invention section, and illustrated in Cabrero et al., Figure 2:

A computer system employing a microkernel executes two different tasks, e.g., operating systems, yet uses common shared libraries. Rather than each task setting up its own libraries, during compile a global offset table is set up for each

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task so that the tasks can use common shared libraries. An abstractions layer is established to allow the tasks to share the global offset table, and thus to use common shared libraries. (Emphasis Added).

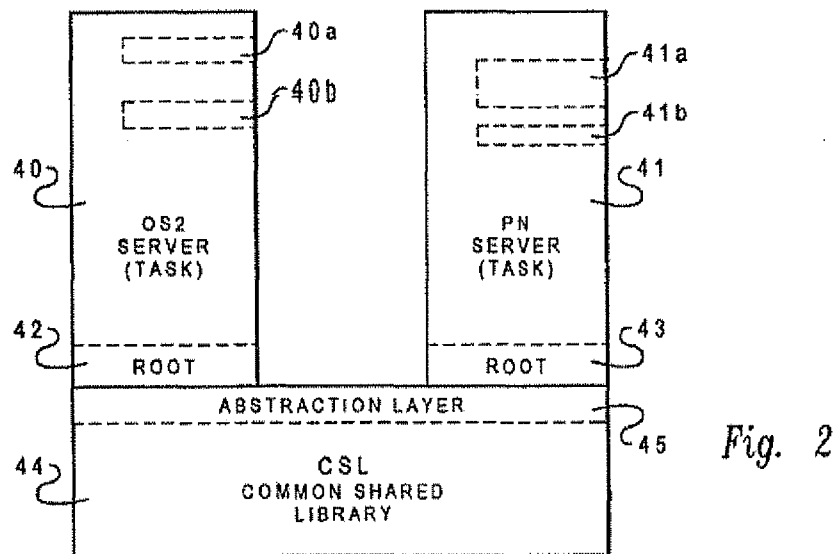


Figure 2 of the Cabrero et al. '075 Patent

Indeed, nowhere in Cabrero et al. does it disclose an instance of an SLCSE provided to one or more of the plurality of software applications from the shared library being run in a context of the one or more of the plurality of software applications without being shared with other of the plurality of software applications.

It is submitted that independent Claim 1 is patentable over the prior art. Its respective dependent claims, which recite yet further distinguishing features, are also patentable over the prior art and require no further discussion herein.

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**III. Conclusion**

In view of the amendments and arguments presented above, it is submitted that all of the claims are patentable. Accordingly, a Notice of Allowance is respectfully requested in due course. If the Examiner determines any remaining informalities exist, he is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,



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Electronic Patent Application Fee Transmittal				
<b>Application Number:</b>		10946536		
<b>Filing Date:</b>		21-Sep-2004		
<b>Title of Invention:</b>		Computing system having user mode critical system elements as shared libraries		
<b>First Named Inventor/Applicant Name:</b>		Donn Rochette		
<b>Filer:</b>		David Scott Carus/Lisa Norberg		
<b>Attorney Docket Number:</b>		78803 (120-2 US)		
Filed as Small Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
Request for continued examination	2801	1	405	405
<b>Total in USD (\$)</b>				<b>405</b>

**Electronic Acknowledgement Receipt**

<b>EFS ID:</b>	5626845
<b>Application Number:</b>	10946536
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	7612
<b>Title of Invention:</b>	Computing system having user mode critical system elements as shared libraries
<b>First Named Inventor/Applicant Name:</b>	Donn Rochette
<b>Customer Number:</b>	27975
<b>Filer:</b>	David Scott Carus/Lisa Norberg
<b>Filer Authorized By:</b>	David Scott Carus
<b>Attorney Docket Number:</b>	78803 (120-2 US)
<b>Receipt Date:</b>	01-JUL-2009
<b>Filing Date:</b>	21-SEP-2004
<b>Time Stamp:</b>	15:31:11
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

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Authorized User	CARUS,DAVID S.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

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**Exhibit B**

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**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		78803_RCEandAmendmentAfterFinal.pdf	383438 db5b09be7f6a67867a079f78a19c7e4670e27923	yes	12
	<b>Multipart Description/PDF files in .zip description</b>				
	<b>Document Description</b>		<b>Start</b>	<b>End</b>	
	Request for Continued Examination (RCE)		1	1	
	Amendment After Final		2	2	
	Claims		3	7	
	Applicant Arguments/Remarks Made in an Amendment		8	12	

**Warnings:****Information:**

2	Fee Worksheet (PTO-875)	fee-info.pdf	30085 48b8da5ab4fab57db4efae0acd5d99a853cab62f	no	2
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<b>Total Files Size (in bytes):</b>			413523
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.